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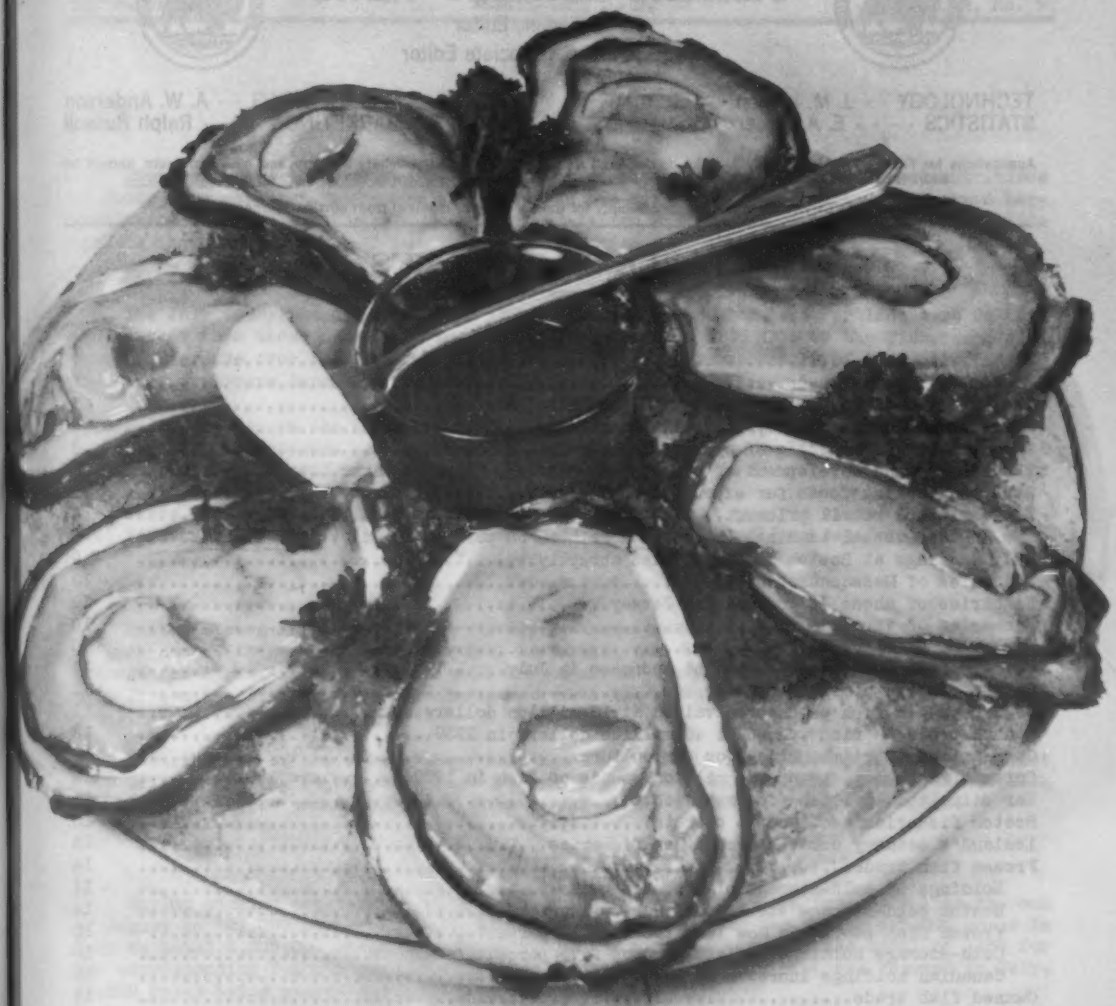
FISHERY MARKET NEWS



SEPTEMBER 1940

ISSUED BY THE
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
WASHINGTON

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

FISHERY MARKET NEWS

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Applications for FISHERY MARKET NEWS, which is delivered free to members of the fishery industry and allied interests, should be addressed to the Director, Fish and Wildlife Service, United States Department of the Interior, Washington, D. C.

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FISHERY MARKET NEWS

A REVIEW OF CONDITIONS AND TRENDS OF THE COMMERCIAL FISHERIES

September 1940 | Washington, D. C. | Vol. 2, No. 9

SUMMARY

Special Article

The Oyster and the Oyster Industry.--Oysters, one of the most healthful and nutritious of foods, are marketed in immense quantities in the United States. American fishermen harvest an oyster crop worth annually over nine million dollars and exceeding twenty million bushels in volume.

Fresh Fish

The July vessel landings of fresh fish at Boston, Gloucester, and Portland were 56 percent larger than those of June. The fish were valued at $991,000 to the fishermen, a 34 percent increase over the previous month. During the first seven months of 1940, 193,481,000 pounds of fish were landed at the three ports.

Sales of fish on the Boston Fish Pier in July totaled $713,000, covering fares amounting to 28,388,000 pounds. Sales were 37 percent higher than in June 1940, and the total fish sold was 69 percent above the total poundage handled in June.

There were 4,192,000 pounds of fish and fishery products received at the Chicago Wholesale Fish Market during July, a 10 percent decline from the total June receipts.

Frozen Fish

United States holdings of frozen fishery products totaled 76,496,000 pounds on August 15, an increase of 23 percent over the July 15 total, and 9 percent in excess of the 5-year average for August 15. Between July 15 and August 15 there were 24,356,000 pounds of products frozen, a drop of 3 percent compared with the quantity frozen during the previous month.

Distribution of the cold-storage holdings is partially indicated by reports of Market News offices showing 14,363,000 pounds held in Boston, 6,782,000 pounds on hand in New York City, and 3,269,000 pounds stored in Chicago the middle of the last week in August.

Canned Fish

Shrimp canning accelerated in August, bringing the total pack from July 1 to the end of August to 127,000 standard cases. The tuna pack for the year was raised 475,000 cases in July to total 2,009,000 cases from January 1, 16 percent higher than the total of 1939 for the corresponding 7-month period. Mackerel canning in California was resumed in July, 27,000 cases being packed during the month.

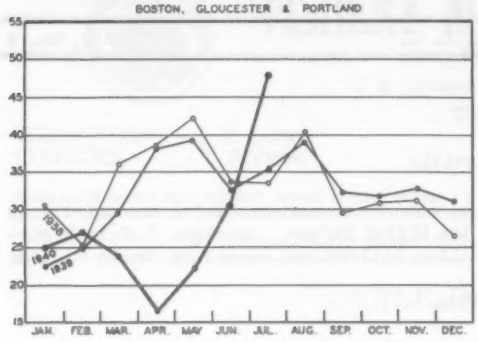
Foreign Trade

Foreign trade in edible fishery commodities in July totaled 37,917,000 pounds, 9 percent greater than the June activity. Trade included 18,053,000 pounds of exports and 19,864,000 pounds of imports. Canned salmon movements contributed 66 percent of the exports.

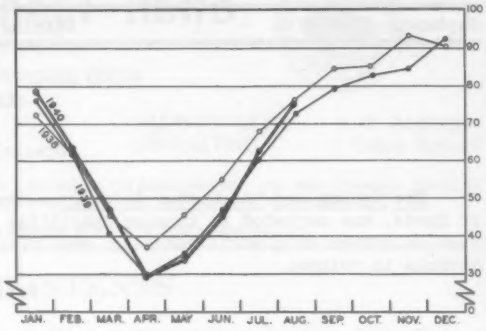
TRENDS OF FISHERY TRADE

IN MILLIONS OF POUNDS

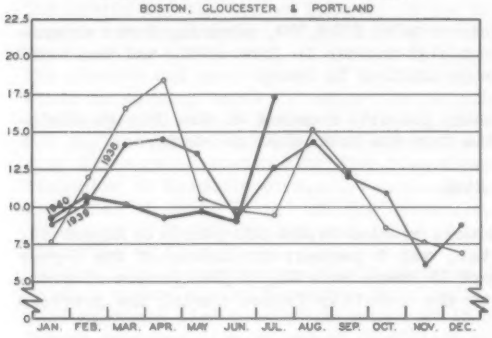
VESSEL LANDINGS, ALL FRESH FISH
BOSTON, GLOUCESTER & PORTLAND



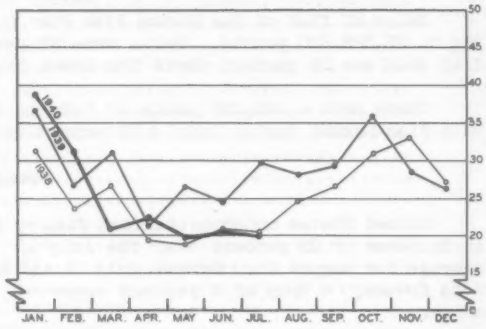
DOMESTIC COLD-STORAGE HOLDINGS OF FROZEN FISH



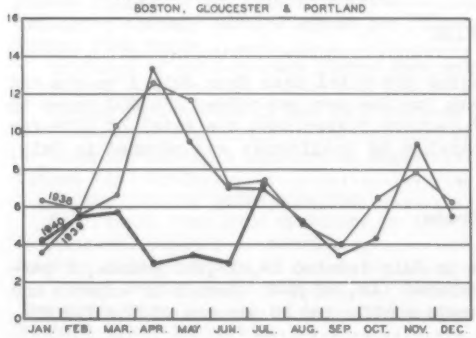
VESSEL LANDINGS, FRESH HADDOCK
BOSTON, GLOUCESTER & PORTLAND



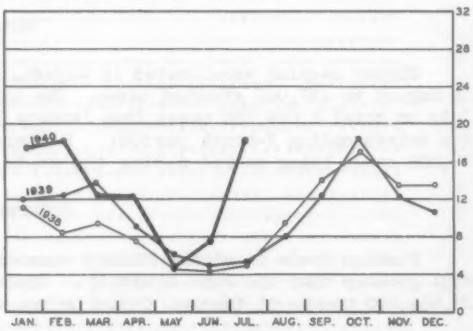
IMPORTS OF EDIBLE FISHERY COMMODITIES



VESSEL LANDINGS, FRESH COD
BOSTON, GLOUCESTER & PORTLAND



EXPORTS OF EDIBLE FISHERY COMMODITIES



THE OYSTER AND THE OYSTER INDUSTRY IN THE UNITED STATES 1/

The oyster industry in the United States is one of the most valuable fishery industries of the world, yielding a total annual income to our fishermen of over nine million dollars. Three species are of commercial value: Ostrea virginica, the eastern oyster; O. lurida, so-called Olympia oyster of the Pacific Coast; and O. gigas, the Pacific oyster, an oyster introduced into the United States from Japan.

The eastern oyster, O. virginica, is of primary importance for its wide distribution and great abundance. It thrives in the inshore waters of our Atlantic and Gulf coasts from Wellfleet, Mass., to the southern extremity of Texas, and was at one time found on the coasts of Maine and New Hampshire. To Pilgrim colonists the extreme northern beds were a most valuable food resource, but no industry exists there today, although a few scattered beds are still found in the Damariscotta River, Maine, and in the Oyster River and Great Bay, N. H. Exhaustion of the supply has been brought about by overfishing and pollution. An important biological fact in the life history of the eastern oyster is that it propagates freely only when the summer temperature of the water reaches about 70° F. In the cold waters of Maine and New Hampshire the natural propagation could not keep pace with the fishing and the natural reefs were soon depleted.

The native oyster of the Pacific Coast, O. lurida, is considerably smaller than the eastern oyster, seldom exceeding a length of 2½ inches. It is found in Queen Charlotte Sound in British Columbia and as far south as San Diego Harbor, Calif., occurring in greatest numbers, however, in the State of Washington, the leading West Coast State in oyster production.

In addition to the cultivation of the native oyster, considerable attention is being given to the cultivation of O. gigas, imported as seed from Japan and grown in Puget Sound and other inclosed waters on our Pacific Coast. Planted for the first time on a commercial scale in 1905, its production has increased so rapidly that over nine million pounds were marketed in 1938.

There were 20,520,000 bushels of oysters utilized commercially in the United States in 1938. These were sold by the fishermen and other primary handlers for $9,692,000. Market oysters totaling 17,129,000 bushels, valued at $8,458,000, and seed oysters totaling 3,391,000 bushels, valued at $1,234,000, were included in the production. The Middle Atlantic States produced oysters valued at $3,255,000 to assume first importance among oyster producing regions. Value of the yield in other sections included the Chesapeake Bay States, $2,601,000; the New England States, $1,998,000; the South Atlantic and Gulf States, $1,070,000; and the Pacific Coast States, $768,000. Market oysters taken yielded 86,932,000 pounds of oyster meats. Fifty-eight percent of the market oysters and 88 percent of those used for seed were produced on private grounds.

The total value of United States oysters included eastern oysters, $8,942,000; Olympia oysters, $188,000; and Pacific oysters, $562,000.

Nutritive Value

From the point of view of nutrition, oysters are better balanced than possibly any other single food. Copper, iron, and manganese found in oyster meats are important in preventing a type of nutritional anemia. Of other elements, calcium and phosphorus are necessary in bone growth, and iodine in the proper functioning of the thyroid gland. Oysters contain most of the essential vitamins; namely, vitamins A, B, C, D, and G, which are all necessary in the diet for the maintenance of a healthy body. The protein in oysters has an especially high nutritive value. Likewise glycogen, a substance similar to starch, is found in a form readily digestible by the human body even when uncooked. Because of this high mineral, vitamin, protein, and glycogen content, oysters are considered one of our most nutritious foods.

1/ Adapted from Fisheries Memorandum I-104.

Natural History of Oysters

Reproduction.--The oyster is exceedingly prolific. It has been determined that an adult female eastern oyster will discharge from 15 million to 114 million eggs in one spawning. Since normally an oyster spawns several times during the summer a single female may produce several hundred million eggs in a season. The amount of spawn produced varies greatly from year to year, depending on local and climatic conditions. The Japanese species equals and may even exceed the eastern oyster in fecundity, but the native West Coast oyster, O. lurida, apparently does not produce over 250,000 to 300,000 young in one season.

An outstanding characteristic of the oyster is its ability to change its sex from year to year, a phenomenon known as "sex reversal". Young oysters in their first year of life are generally male. The second year half of them will become females and a certain number will continue to alternate between one phase and the other. It has been found that about 10 percent of adult Long Island oysters kept under observation at the Fish and Wildlife Service laboratories annually change their sex.

The time of spawning varies from year to year, depending upon the water temperature and ripeness of the gonads. Eastern oysters may spawn, if fully ripe, at a temperature of 66° - 67° F., but spawning proceeds more copiously when the water is above 70° F. Since males can spawn at much lower temperatures than the females, they usually initiate spawning. Under natural conditions the males spawn first and provide a chemical stimulation for spawning in the female.

Insemination of eggs takes place in the water, and in five to ten hours, depending on temperature, a small free-swimming oyster larva develops. In about two weeks it completes its development and at that time measures approximately 1/75th of an inch in diameter. The young oyster is now ready to set or strike, having previously developed a powerful foot for crawling and a large supply of sticky material by which it can cement itself to some clean, hard object in the water. It attaches by the left valve and once secured must remain fixed for the rest of its life.

Reproduction in the West Coast oyster, O. lurida, is different in that the eggs are not discharged into the water as is the case with the Atlantic oyster but remain within special brood chambers in the mantle cavity of the female. They are fertilized by sperm brought in with the incoming current of water and remain inside for 12 - 16 days after which they are released and complete their development outside the mother organism. Similarly, as with the eastern oyster, they attach to shells, rocks, and other hard objects found in the water.

In the life of the oyster the setting period is of prime importance, for, should young oysters find no suitable place of attachment, they will die. It is possible to collect and save vast numbers which would otherwise be lost by placing in the water shells and other materials to which they can attach.

Feeding.--The oyster feeds by opening the valves, drawing a current of water through the gill chambers and straining out the microscopic plants and animals. Changes in temperature greatly affect the feeding mechanism but at a constant temperature of 78° F. large volumes of water can be filtered by the oyster. It has been accurately determined that at this temperature as much as 27 quarts may pass through the gill chambers of a single adult oyster in one hour. Food contained in the water consists largely of diatoms, peridinians, bacteria, and other small organisms. Diatoms, simple microscopic plant forms, are probably of greatest importance in the diet of the oyster.

Occasionally abnormally colored oysters--green, brown, and almost black--are found in certain localities. Greening may be due to a certain variety of diatoms in the diet, in which case the color is usually limited to the gills. Green-gilled oysters are of fine quality and, while not generally acceptable to the American public, are regarded in France as a superior product and special methods are used to grow them. Greening caused by an excess of copper in the tissues colors the entire body. It does not render the oysters inedible but gives them a coppery taste.

Oyster Culture

Suitable locations for oyster farms.--Under natural conditions oysters are found in brackish waters in depths ranging from half way between tide marks to 40 and 50 feet. Occasionally oysters are found even in deeper water, but no commercially important beds occur below 50 feet. They are well adapted to withstand considerable fluctuations in temperature and salinity of water, thriving in the bays and estuaries where environmental conditions frequently change. In the Gulf of Mexico and on the flats of the inshore waters in southern States the temperature at the oyster bottoms often reaches or even exceeds 90° F., whereas in the northern States nearly freezing temperatures occur every winter. Tolerance to salt content is also very great. Natural oyster beds are usually located near river mouths and in bays where the salt content of the water is greatly reduced. Water with salinities ranging from 8 - 26 parts per thousand seems to provide an environment in which oysters can thrive.

In selecting a location for oyster farming the foremost requirements are a protected area of hard or semihard but not shifting bottom of moderate depth, where water changes regularly with the tide; a place free from pollution; and an abundant supply of food. A very soft mud bottom may be reinforced with shell, gravel, slag, or similar material so that the oysters will not sink into the mud and be smothered. Sandy, shifting bottoms are entirely unsuitable.

Collection of seed.--The task of an oyster farmer is first to prepare his ground by dredging and clearing away old shells and natural enemies of the oyster. He then plants cultch or material on which to catch the "set". For this purpose material such as gravel and the shells of oysters, clams, and scallops are being used on different parts of the coast. To increase the area available for setting, various spat collectors can be used. Cement-coated tubes and poles have proved satisfactory for gathering seed in certain localities. Wire bags filled with shell are commonly used. A particularly efficient collector has been developed from the ordinary egg crate partition coated with a mixture of lime and cement. This device affords a maximum area for "striking". In some places brush stacked in rows on mud flats can be used to great advantage. Set obtained on shell collectors may be left until the following fall or spring, but usually it is transplanted to growing grounds.

Selection of growing grounds.--Good growing grounds are often located in deeper waters where there is an abundant supply of food. In Long Island Sound oysters are usually transplanted as many as five times before they are ready for market. Eastern oysters take from two to five years to grow to marketable size, depending on the locality in which they live. Oysters planted so that they have unrestricted space for growth acquire the most desirable shape, while those crowded excessively become thin and poorly flavored as well as ill-shaped. At the present time the oysters used chiefly for canning come from the overcrowded natural reefs of the southern States where they grow in great clusters. If properly cultivated, however, the southern beds may produce oysters of high quality equally suitable for canning, shucking, and the half-shell trade.

Special methods on the Pacific Coast.--For the cultivation of the West Coast oyster, O. lurida, an elaborate system of dikes has been arranged whereby large areas of otherwise useless mud flats are converted into a series of pools. The system is so devised that the highest levels will be covered with water at low tide. Because of the great range of tide, the enclosed tracts of about one acre each may be arranged at as many as five different levels. Oyster larvae, when ready to attach, strike near high tide line. Here they are allowed to remain for a year or two before they are transplanted to a lower level. Growth is slow in this species, from four to five years being required to reach marketable size.

The imported Pacific oyster, O. gigas, differs from our native oysters in appearance by its more elongate and fragile shell. Imported as seed, it arrives from Japan in February and March. It is then planted rather thickly and left undisturbed until the following spring. It may be transplanted several times but grows very rapidly, attaining a marketable length in less than two years.

The introduction of the Pacific oyster to the Atlantic coast is undesirable because it may interfere with the propagation of the native species. Experiments have shown that the two species interbreed but the quality of the hybrid oyster has not yet been ascertained.

Enemies.--Oysters have a number of natural enemies that cause extensive damage to the industry every year.

The great pest of the North Atlantic Coast from Cape Cod to Delaware Bay is the starfish, Asterias forbesi, that preys on an oyster by enclosing it in its arms, or rays, and exerts a steady pull that eventually opens the shell. The starfish then protrudes its stomach into the gaping valves and digests the meat. It is difficult to estimate the total losses due to the ravages of the starfish. It is known, however, that in Connecticut waters alone not less than 500,000 bushels are being destroyed annually. Great damage is done on oyster bottoms in Narragansett Bay, Rhode Island, and Buzzards Bay, Massachusetts. Protection of oyster bottoms in these waters is laborious and costly. The most commonly used mechanical device for the control of starfish is the star mop. This implement, which consists of an iron bar supporting a number of heavy rope mops, is dragged over the oyster beds. After the starfish become entangled the mop is brought to the surface and plunged into hot water. The oyster dredge and the suction dredge have also been used to draw starfish from the bottom. Since all mechanical methods of control are expensive, various chemicals have been tested in an attempt to find a substance toxic to the starfish and yet harmless to other animals in association with it. Calcium oxide or quick lime has proved the most satisfactory. When spread over the bottom, lime settles on the starfish and inflicts wounds in the delicate tissue covering the animal, eventually causing its death. Calcium oxide is being adopted for starfish elimination by the oystermen in Long Island Sound.

Of equal importance as an enemy of the oyster is the widely distributed screw borer or oyster drill, a snail which attacks oysters and other mollusks by boring small holes in the shell. The two species particularly destructive on the Atlantic Coast are Urosalpinx cinerea and Eupleura caudata. It is estimated that in Delaware Bay alone more than one million dollars worth of oysters are killed every year by the drills. In Long Island Sound and certain parts of the Chesapeake region the destruction of seed may exceed 70 percent. Drills can be removed from oyster bottoms with drill dredges or they may be taken in traps. Bags of shells made of chicken wire and baited with seed oysters make effective traps. These can be easily removed from the water, cleaned, and replanted as necessary. It is important to prevent the spreading of drills during transplantation of oysters from one area to another and this is done by forking, screening, or floating the oysters.

Another oyster enemy which does considerable harm, especially in South Carolina, is the boring sponge, Cliona celata. This animal bores into the shell of the oyster, forming small tunnels in which it lives. By this means the shell is gradually honeycombed, and the oyster becomes thin and weak from its attempts to seal up the openings where the tunnels penetrate the shell completely. The sponge also spreads over the outside of the shell and may smother the oyster by its very size. In transport the sponge dies and decomposes very quickly, spoiling the meat of the oyster.

The wafer or "leech", a turbellarian worm, has been known to destroy great numbers of oysters in the south, and the "black drum" or drumfish occasionally attacks oyster beds. Mussels will smother and starve oysters by attaching to their shells in great numbers and exhausting the food supply. Similar damage on the Pacific Coast is done to oysters by the arched slipper shell. Even ducks feed on the small Olympia oysters of the Pacific Coast and cause heavy losses, especially during their migratory season.

Ownership of oyster beds.--In the Southern States on the Atlantic seaboard oysters are taken mostly from State-owned or public bottoms, while in the North they come almost entirely from privately leased beds, especially in New England and in the States of New York and New Jersey where oyster cultivation is most intensive. On the Pacific Coast oysters come mainly from privately owned beds in the Puget Sound and Willipa Harbor regions of the State of Washington.

Sanitary control.--It is doubtful whether any other food product in this country is subject to more stringent sanitary regulations than the oyster. The beds from which oysters are taken for market are subjected to sanitary examinations by the health authorities of the various States in which oysters are produced. If the bed meets certain bacteriological and chemical standards of purity, a certificate is issued to the oyster growers by appropriate State authorities.

After the oyster has been extracted from the shell it is again subjected to rigid bacteriological examination and must meet certain standards of purity. Employees engaged in handling fresh oysters at the shucking plant are required to pass periodic medical examinations and any found suffering from contagious diseases are prohibited from engaging in this type of work. The shucking plant and its physical equipment also are given periodic examinations by various municipal and State health authorities.

The Federal Government, through the U. S. Department of Agriculture and the Public Health Service, exercises control over oysters shipped in interstate commerce. Regulations on sanitation, adulteration, and mislabelling are issued and enforced by these agencies. Each shipper of oysters for interstate commerce obtains a certificate countersigned by the U. S. Public Health Service, showing that the oysters to be shipped conform to the standards of purity. Each shipment must be accompanied by this certificate and a tag bearing the name of the dealer and the origin of the oyster. In accordance with the law, common carriers refuse to accept shipments of oysters not accompanied by these certificates and tags.

These improved sanitary conditions in the oyster industry have resulted in the marketing of a food product which is as pure as modern science can deliver to the consumer.

AMERICAN FISHERIES SOCIETY HOLDS 1940 MEETING

The seventieth annual meeting of the American Fisheries Society was held in Toronto, Ontario, on September 5 and 6, 1940. Attending the meeting were many fishery scientists, administrators, and conservationists, and other interested persons from the United States, Canada, and other parts of North America. The program of business centered on the presentation and discussion of 73 prepared papers on technical phases of fisheries work. Papers were divided into six categories: Commercial fisheries; fish culture and stocking; fish management (general); parasites, diseases, and enemies; research studies; and miscellaneous topics.

Among the papers presented were "The Relationship of the Fishery Advisory Committee to the Commercial and Sport Fisheries", by Chas. W. Triggs, Chairman, Fishery Advisory Committee; "Grading Methods in Minnesota as Related to the Conservation and Orderly Marketing of Fish", by Henry J. Hoffman, Minnesota Department of Agriculture, Dairy and Food; "Experimental Study of the Effect of Various Water Temperatures on the Growth, Food Utilization, and Mortality Rates of Fingerling Sockeye Salmon", by Lauren R. Donaldson, School of Fisheries, University of Washington, Seattle, and Fred J. Foster, U. S. Fish and Wildlife Service; "Possibilities for the Promotion of the Commercial Fisheries of Puerto Rico", by Luis C. Bonnet, Puerto Rico Department of Agriculture and Commerce; "Cooperative Associations in Relation to Conservation and Orderly Marketing", by Ralph Russell, U. S. Fish and Wildlife Service; "The Relation of Refrigerated Lockers to Conservation of Fishery Products", by R. W. Harrison, and M. E. Stansby, U. S. Fish and Wildlife Service; "How the Fishery Market News is Useful in Fishery Conservation", by Clarence R. Lucas, U. S. Fish and Wildlife Service; "Salmon Salvage Problems on the Upper Sacramento River, California", by Paul R. Needham, U. S. Fish and Wildlife Service; "Technological Research in the Development of our Fishery Resources", by Carl R. Fellers, Massachusetts State College; and "Artificial Feeding of Whitefish Fry", by George Butler, Manitoba Department of Mines and Natural Resources. All papers will be published in the Transactions of the American Fisheries Society, Volume 70, which should be completed in a few months.

Dr. T. H. Langlois of the Ohio Division of Conservation, President of the Society for 1939-40, presided. The new officers for 1940-41 are James Brown, Frankfort, Kentucky, President; John Van Oosten, Ann Arbor, Michigan, 1st Vice President; Joe Hogan, Lonoke, Arkansas, 2nd Vice President; and Russell P. Hunter, Hartford, Connecticut, Secretary-Treasurer.

Prior to the meeting, the 34th Annual Convention of the International Association of Game, Fish, and Conservation Commissioners was held on September 2 and 3. September 4 was devoted to conference of the U. S. Fish and Wildlife Service with the game and fish administrators from the various States. Director Ira Gabrielson of the Service presided at this conference.

THE SPAWNING AND SETTING OF OYSTERS IN LONG ISLAND SOUND

A broad knowledge of the spawning and setting of oysters aids oyster growers in obtaining more certain sets of young oysters. Because of this fact, the Fish and Wildlife Service, in its biological work, has placed emphasis on the study of oyster propagation. In this connection, a bulletin has recently been published, entitled "Spawning and Setting of Oysters in Long Island Sound in 1937, and Discussion of the Method for Predicting the Intensity and Time of Oyster Setting", by Victor L. Loosanoff and James B. Engle.

Oyster farming in Long Island Sound represents the highest type of oyster cultivation on the Atlantic coast of North America and the setting of young oysters is of vital importance in these farming activities.

The publication, Bulletin No. 33, may be obtained for 15 cents from the Superintendent of Documents, Washington, D. C.

THE HISTORY AND DEVELOPMENT OF THE FISHERIES OF THE COLUMBIA RIVER

The fisheries of the Columbia River during recent years (1928 to 1932, inclusive) have produced an average of 29,800,000 pounds of fish annually. These have been worth, in the aggregate, $2,425,000 to the fishermen. The final products of these fisheries as delivered to the consumer are valued at about ten million dollars annually. A description of the Columbia River fisheries, including their background, magnitude, methods, and problems, has recently been published by the Fish and Wildlife Service. This publication, "The History and Development of the Fisheries of the Columbia River", Bulletin No. 32 of the Bureau of Fisheries, by Joseph A. Craig and Robert L. Hacker, may be obtained for 20 cents from the Superintendent of Documents, Washington, D. C.

The fishery resources of the Columbia River have passed through a long period of exploitation during which settlement of the Columbia River Basin; improvement of fishing equipment and methods and of preserving processes; increase of export demands; change in fishery regulations; and lumbering, irrigation, power development, and flood control and navigation have all exerted influence. The survival of these important resources is largely dependent upon the adequacy of the system of regulation of fishing effort and the coordinated planning and fish protection at projects for water use.

STUDY ON PACKING FOODS FOR EXPORT IS PUBLISHED

The Bureau of Foreign and Domestic Commerce has announced the publication of a volume entitled "Modern Export Packing", which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for one dollar. This 530-page publication discusses methods employed in packing foodstuffs and describes the type of containers utilized. The prevention of damage or loss and the achievement of maximum economies are given extensive attention in the volume.

WHOLESALE AND RETAIL PRICES

The Bureau of Labor Statistics' index of wholesale commodity prices for the week ending August 31 was 77.7 percent of the 1926 average. This compared with an index of 77.3 percent for the week ending July 27. The foods index rose from 69.6 percent to 71.4 percent during the month. Since September 2, 1939, the all-commodity index rose 3.2 percent and that for foods increased 4.2 percent.

Retail costs of food on August 13, according to a preliminary statement of the Bureau of Labor Statistics, indexed at 96.2 percent of the 5-year average of 1935-39. This was a decrease of 1.2 percent from the July 16 index and compared with an index of 93.5 percent of August 15, 1939. There were 54 foods included in the all-foods index, 32 of which were quoted at higher prices than a year earlier.

Average food costs declined in 42 cities, increased in 5, and in 4 did not change. An average retail price of 15.9 cents per 16-ounce can was recorded for pink salmon for August 13, 1940. This was a gain of .6 percent over the July 16 figure and 24.2 percent above the August 15, 1939, average. Red salmon was priced at an average of 25.8 cents per can, the same price that prevailed on July 16 but 11.7 percent higher than the August 15, 1939, retail price.

NEW ENGLAND VESSEL LANDINGS INCREASED MORE THAN 50 PERCENT IN JULY

There was an increase of 56 percent in the landings of fishing vessels of 5 net tons and over at Boston and Gloucester, Mass., and Portland, Maine, during July as compared with the June 1940 receipts. Fishermen landed 47,874,000 pounds of fish and fishery products at these ports during July compared with 30,642,000 pounds landed the previous month, according to Fisheries Statistical Bulletin No. 1397. The July 1940 landings increased 35 percent above the receipts for July 1939. The value of these landings to the fishermen was $991,000, a rise of 34 percent above the value of the June 1940 landings and of 39 percent compared with the July 1939 receipts. Sixty-three percent of the items landed were received at Boston, 27 percent at Gloucester, and 10 percent at Portland. Haddock was first in importance among the items contributing to the receipts with 17,407,000 pounds landed. Following in importance were rosefish, 10,489,000 pounds; cod, 7,107,000 pounds; mackerel, 4,852,000 pounds; whiting, 4,220,000 pounds; and flounders, 1,329,000 pounds. All of these items displayed increases over the totals for July 1939, haddock receipts increasing 38 percent; those of rosefish, 50 percent; and mackerel, 873 percent. The mackerel receipts during July 1939 totaled 499,000 pounds.

Landings during the first seven months of 1940 totaled 193,481,000 pounds, valued at $5,716,000. These figures represent a decrease of 13 percent in volume and an increase of 9 percent in value as compared with the July 1939 totals. Since January 1 the landings have included 75,180,000 pounds of haddock, a decrease of 10 percent from the January-July 1939 figure; rosefish, 44,657,000 pounds, a gain of 3 percent; cod, 31,525,000 pounds, a 40 percent drop; flounders, 11,500,000 pounds, a drop of 3 percent; mackerel, 8,149,000 pounds, a 42 percent increase; pollock, 7,993,000 pounds, a decrease of 23 percent; and whiting, 6,932,000 pounds, a 29 percent increase.

JULY LANDINGS AT BOSTON FISH PIER RISE ABRUPTLY

The landings of fish at the Boston Fish Pier during July displayed a 69 percent increase over those of the previous month. This information was made available by the Fishery Market News Service office at the fish pier. There were 28,388,000 pounds landed and sold compared with 16,794,000 pounds handled in June 1940 and 23,132,000 pounds in July 1939. The July receipts averaged 2.51 cents per pound in price, yielding the fishermen a total of $713,000. The unit price was 19 percent lower than that of the previous month and 4 percent greater than that of the corresponding month of 1939, and the total sales value was 37 percent greater than that of June 1940 and 27 percent in excess of that of July 1939.

Offshore vessels contributed 24,508,000 pounds or 86 percent of the total landings and inshore vessels produced 3,880,000 pounds or 14 percent, these activities contributing 391 and 418 fares, respectively. There was a total of 809 fares. Haddock, 12,772,000 pounds; cod, 4,610,000 pounds; and mackerel, 4,106,000 pounds, led the items produced in offshore waters, and those from inshore areas included primarily whiting, 1,776,000 pounds; haddock, 835,000 pounds; and flounders, 478,000 pounds.

The July landings brought the total volume for the first seven months of 1940 to 134,162,000 pounds of fish landed at the fish pier. This was 17 percent below the 161,483,000 pounds received during the corresponding period of 1939. The unit price received, however, was 31 percent greater for the 7-month period of 1940, averaging 3.47 cents per pound. Because of the rise in average price, the total value of fish sales by the fishermen has remained in excess of that of the first seven months of 1939, totaling $4,655,000, a gain of 9 percent over the previous year's total. Fares landed in 1940 to the end of July totaled 3,782 compared with 3,669 fares for the January-July 1939 period.

FISHERIES OF MASSACHUSETTS

A recent sale of 12 large otter trawlers and the projected sale of additional vessels is affecting the course of the fishing industry of Massachusetts, according to the Service's fisheries marketing agent surveying the fisheries of that State. The removal of the trawlers from fishing activity will eliminate from the North Atlantic sea fisheries gear potentially capable of capturing 50 to 70 million pounds of fish annually. Considerable readjustment in employment of fishermen, marketing of fish, and the provision of accessory fishing services and supplies is resulting.

Massachusetts otter trawlers are making shorter trips now than they were making last year at this time and prices to the fishermen have been higher. Mackerel seiners have continued to make large catches of comparatively small fish.

FISHERIES OF RHODE ISLAND AND NEW JERSEY

One of the Service's fisheries marketing agents in New England reports that at present the soft clam fishery in the Little Narragansett Bay area is below normal because of a scarcity of clams. The hard clam fishery is said to be almost normal, and bay scallops are reportedly more plentiful than normal.

The commercial fish stocks off the coast of New Jersey have so far this year appeared to be less abundant than usual. The most obvious exception to this generalization is bonito. Bluefish and weakfish have been markedly scarce.

FISHERIES OF VIRGINIA

The Virginia Commission of Fisheries reports that oystering activity in Virginia has been resumed. On the first of September oysters from private oyster grounds appeared on the markets, but it was not until September 15 that oysters from State-owned grounds could be sold. Except on the Potomac River the State-owned oyster beds are closed until October 1. The earlier opening on the Potomac River was arranged because of concurrent jurisdiction with Maryland over the fisheries of those waters. The Maryland oyster season opened generally on September 15. Oyster producers of Virginia were reminded by State officials of the provisions of Federal and State health requirements covering oyster handling.

FISHERIES OF FLORIDA

Shipments of stone crabs out of Florida have been prohibited because of scarcity of these crustaceans, according to the Service's marketing agent in Florida.

A Statewide conference of Florida commercial fishermen and dealers was held early in August in Titusville and the group formed a committee to organize a program of desired legislation. The conference also adopted resolutions which pertained largely to conservation and marketing of fish.

CHICAGO FISH RECEIPTS SHOW SLIGHT DECREASE IN JULY

The receipts of fish and fishery products at the Chicago Wholesale Fish Market declined 10 percent in July compared with the receipts of the previous month, according to the records of the Fishery Market News Service office in Chicago. However, the amount of products received was 22 percent greater than the receipts of July 1939. There were 4,192,000 pounds of fish and fishery products received--2,303,000 pounds from fresh-water sources, 1,242,000 pounds from salt-water, and 647,000 pounds of shellfish and miscellaneous items. The total was composed of receipts for 75 items, of which 27 were fresh-water forms, 34 were from salt water, and 14 represented shellfish and miscellaneous items.

The fresh-water items received in Chicago during July which contributed the largest amounts to the receipts were lake trout, 471,000 pounds; whitefish, 421,000 pounds; and yellow perch, 320,000 pounds. Both whitefish and yellow perch displayed increases over the totals for June 1940 and July 1939, whitefish increasing 44 percent and 23 percent, respectively, over the receipts of the earlier periods, and yellow perch showed gains of 71 percent and 102 percent over the previous totals. Salt-water items were led by halibut, with 664,000 pounds received, and rosefish fillets of which 232,000 pounds were delivered. The rosefish fillet receipts represented an increase of 99 percent over the total for July 1939. Shrimp was of primary importance among shellfish items, with 474,000 pounds received, a decrease of 45 percent from the June 1940 total and a drop of 10 percent below the receipts of July 1939.

Domestic sources provided 2,985,000 pounds of products. The largest contributions from domestic sources included 584,000 pounds from Michigan, or 20 percent of the domestic total; 503,000 pounds from Wisconsin, 17 percent; and 407,000 pounds from Massachusetts, 14 percent. Products imported totaled 1,207,000 pounds, of which 59 percent or 711,000 pounds were shipped from British Columbia, 26 percent or 308,000 pounds came from Manitoba, and 99,000 pounds were furnished by Alberta. Of the British Columbia shipments, 377,000 pounds were shipped in bond by United States fishermen.

Forty-seven percent of the total receipts, or 1,967,000 pounds, was shipped to Chicago by express; 15 percent, or 636,000 pounds, came by railway freight; and 38 percent, or 1,590,000 pounds, arrived in trucks.

The receipts in Chicago for the first seven months of 1940 have totaled 33,163,000 pounds, a 29 percent increase over the receipts for the corresponding period in 1939. This total was composed of 56 percent fresh-water items, 27 percent salt-water items, and 17 percent shellfish and miscellaneous other products. The increase over the 1939 period was due to enlarged shipments of lake trout, whitefish, halibut, rosefish fillets, and shrimp. These items showed increases of 31 percent, 63 percent, 26 percent, 105 percent, and 23 percent over the totals of the January-July 1939 period. Lake trout, 3,072,000 pounds, led the fresh-water items contributing to the receipts; whitefish followed with 2,581,000 pounds; and sauger contributed 2,480,000 pounds. Among salt-water items, halibut provided 4,296,000 pounds to occupy primary importance, and rosefish fillets, 1,969,000 pounds, followed. Shrimp contributed 3,761,000 pounds to lead the shellfish and miscellaneous items in importance.

HALIBUT SEASON CLOSES SEPTEMBER 26

The International Fisheries Commission has announced that the North Pacific season in areas 3 and 4 will be closed to halibut fishing at midnight, September 26, 1940. Permits for the retention and landing of halibut taken incidentally to fishing for other species will not be valid after midnight, September 30.

The closing of the current halibut season is over a month earlier than the end of the season a year ago. Last year the season closed on October 28. The current fishing season is the shortest in the history of the Pacific halibut fishery.

1939 PACKAGED FISH PRODUCTION VALUED AT 13 MILLION DOLLARS

The output of fresh and frozen packaged fish at points of primary production in the United States, exclusive of California, amounted to 131,316,000 pounds, valued at $13,030,000 in 1939. This was a 12 percent gain in volume and a 20 percent gain in value as compared with the 1938 output. Information on fish packaged in 1939 appears in Fisheries Statistical Bulletin No. 1398.

Haddock, first in importance among species packaged, accounted for 38,199,000 pounds, valued at $3,754,000. Next in importance were rosefish, 24,103,000 pounds, valued at $2,394,000; and cod, 19,442,000 pounds, valued at $1,927,000. Blue pike, cusk, flounders, hake, pollock, sauger, and whiting, each of which exceeded one million pounds, followed in order.

Frozen fillets comprised 54 percent of the total; fresh fillets, 38 percent; fresh and frozen pan-dressed fish, 6 percent; fresh sticks, 1 percent; and fresh and frozen steaks, 1 percent.

CANADA PRODUCES FISH VALUED AT 40 MILLION DOLLARS IN 1939

There were 1,068,000,000 pounds of fish and shellfish taken by Canadian fishermen during 1939, according to an advance report on the fisheries of Canada issued by the Canadian Department of Trade and Commerce. The total value of these items at the point of landing was $21,928,000, and $40,073,000 was the value of the products as marketed in fresh, canned, smoked, dried, or other prepared condition. Of the latter value, sea fisheries contributed $33,972,000 or 85 percent while inland fisheries provided $6,101,000 or 15 percent. Compared with 1938, the fishery products decreased $420,000 in value. Most important of the species contributing to the catch were salmon, lobsters, herring, cod, sardines, halibut, whitefish, and haddock in the order listed. One hundred fifty million pounds of salmon were captured, contributing $13,409,000 to the fishermen. British Columbia, furnishing $17,699,000, in products led in importance among the Provinces. Nova Scotia, New Brunswick, Ontario, and Quebec followed in order. Equipment valued at $4,918,000 was utilized in primary operations, and the fish canning and curing plants with equipment were valued at $21,500,000. There were 83,776 men employed in fishing and preparing the fishery products, 70,019 of which were hired in the prosecution of the sea fisheries and 13,757 persons in the inland fisheries.

CANADA MAKES WARTIME POLICY FOR AGRICULTURE

The Canadian Government has adopted a wartime agricultural policy to furnish Great Britain with the food it needs to win the war, to make adjustments to aid producers of export products which have lost their markets because of war, to stabilize prices, and to minimize the effect of post-war readjustment. Agricultural measures have been taken under the authority of the War Measures Act which became effective on September 1, 1939. Measures become effective upon issue as Orders-in-Council. Funds to carry on necessary work are obtained from the general war appropriation with cabinet sanction.

Three boards administer the wartime agricultural measures: these include a supply board for the adjustment of agricultural efforts to meet wartime needs, a bacon board to administer the Anglo-American bacon agreement, and a trade board to maintain stabilized prices for both agricultural and non-agricultural products.

In contrast to the World War of 1914-18, Canada is not expanding acreage for agricultural uses and no major shifts in land use are to be made. It is anticipated that improvements in the efficiency of production and the quality of the products are likely to be as significant as changes in the volume of production.

A 43-page discussion of these measures and their comparison with the activities undertaken 25 years ago is included in Foreign Agriculture for June 1940, published by the U. S. Department of Agriculture.

ONTARIO FISHERMEN CAPTURE 33 MILLION POUNDS OF FISH IN 1939

During 1939, 4,206 Ontario fishermen captured 33,743,000 pounds of fish, valued at $2,511,000, according to an advance report on the fisheries of Ontario, the Prairie Provinces (Manitoba, Saskatchewan, and Alberta), and Yukon, issued by the Canadian Department of Trade and Commerce. The Prairie Provinces employed 7,403 fishermen who captured 46,956,000 pounds of fish, valued at $1,653,000 at the point of landing, and 30 fishermen in the Yukon Territory obtained a catch valued at $5,000.

The fisheries of Ontario include whitefish, lake trout, blue pickerel, herring, pickerel, perch, and other species; those of the Prairie Provinces include whitefish, pickerel, sauger, and other species; and those of the Yukon Territory are centered upon salmon, trout, and whitefish.

Ontario manufactured fishery products in all forms valued at $3,007,000, and those from the Prairie Provinces were valued at $2,565,000. Of the latter figure, Manitoba produced items valued at $1,655,000; Saskatchewan, $478,000; and Alberta, $431,000.

WAR STIMULATES BRITISH FOOD RESEARCH

War has stimulated the British food manufacturing industry, according to an article in the August issue of Food Industries. The loss of supplies from Denmark and Holland has placed demands upon the home food industry in Great Britain which has been met in a number of ways. Increased acreage has been sown in grains and restrictions have been placed on the use of certain grains in animal feeds. Apparatus has been devised for electrically thawing frozen meat. Equipment has been developed for grading fish according to size, and latex compounds are being utilized in the preservation of certain foods.

The Department of Scientific and Industrial Research has been working on the preservation of "fresh" properties in unprocessed foods during storage and transport. Chilled beef from overseas is being transported in controlled carbon dioxide gas storage. Wastage of fruit in the course of transportation is being studied to develop methods providing savings. Storage in gas and control of the temperature of ships' holds are under observation. Reports of experiments conducted in Scotland indicate that under the best conditions of storage and cleanliness fish may remain "fresh" in ice not more than 11 or 12 days, and that under ordinary conditions in trawlers at sea the maximum period is often only six to seven days.

Brine freezing and cold-storage equipment are now permitting longer journeys and bigger catches. A combination of salting and cold-storage is being used to produce better-flavored mild-cured herring, with a reported stronger appeal to the housewife. The studies have revealed that herring and whitefish, after rapid freezing in cold brine, retain their best quality for three months when stored at a low temperature.

A suggested meat supply under consideration in Great Britain is that which could be provided by canned reindeer meat from Canada, the article reports.

SCOTCH FISHERIES CONTINUE TO OPERATE

The Commercial Intelligence Journal for August 10 states that comparatively satisfactory conditions had prevailed in the fishing industry on the east coast of Scotland prior to July 3. At that time a number of British fishing vessels had been removed from fishing to engage in other activities but the catches of the local fleets had been augmented by those of foreign vessels operating out of Aberdeen. Regular supplies were available, prices were maintained at a reasonable level, and the demand was good, the Journal stated.

ICELAND'S ECONOMY CENTERS AROUND HER FISHERIES

Fish and fish products constitute by far the largest part of Iceland's exports, according to the July 27 issue of Commerce Reports. These include stockfish, salt fish, fresh fish on ice, salt and spiced herring, fish and herring meal, cod-liver oil, and herring oil. About one-third of that country's foreign trade has normally been sent to Denmark and one-fourth to Great Britain, and trade with Spain and Italy has expanded considerably in recent years. The principal goods imported into Iceland include cereals, sugar, coal, salt, and hardware.

Iceland is mountainous with large numbers of lava fields, glaciers, and ice plateaus. It is roughly in the same latitude as Nome, Alaska. Its population of 118,000 persons relies principally upon the sea for a living as fish and fish products constitute about 85 percent of the country's exports.

FROZEN FISH TRADE

Holdings of Cold-storage Plants Show Gains

Holdings of frozen fishery products in United States cold-storage plants on August 15 totaled 76,496,000 pounds, 23 percent greater than those on hand a month earlier, according to information collected by the Agricultural Marketing Service of the Department of Agriculture and compiled in Fisheries Statistical Bulletin 1396. The holdings constituted a 5 percent increase over the stocks of August 15, 1939, and a 9 percent rise above the 5-year average for August 15. The largest stocks held included halibut, 13,976,000 pounds; whiting, 9,463,000 pounds; mackerel, 7,912,000 pounds; haddock fillets, 6,282,000 pounds; salmon, 5,009,000 pounds; and rosefish fillets, 2,597,000 pounds. The mackerel holdings represented an increase of 126 percent from the supply on hand on August 15, 1939, and salmon stocks were 48 percent larger than those of a year previous. An important decline was noticeable in the holdings of shrimp which fell from 3,295,000 pounds on August 15, 1939, to 1,512,000 pounds on August 15 of the current year.

United States cold-storage plants froze 24,356,000 pounds of fishery products during the month ending August 15. This was a decrease of 3 percent from the total of the month previous and gains of 9 percent and 21 percent over the month ending August 15, 1939, and the 5-year average for the month ending August 15. Items frozen, in order of importance, included whiting, 4,690,000 pounds; haddock fillets, 3,030,000 pounds; rosefish fillets, 2,701,000 pounds; halibut, 2,279,000 pounds; salmon, 2,033,000 pounds; and mackerel, 1,731,000 pounds. Among shellfish, the most important item was squid, of which 634,000 pounds were frozen, a 348 percent increase over the amount of squid frozen in the corresponding month of 1939.

Stocks of cured herring in cold-storage plants on August 15 totaled 26,113,000 pounds, an increase of 41 percent over the 18,496,000 pounds held on the corresponding date a year previous and 67 percent greater than the 5-year average for August 15. Mild-cured salmon on hand amounted to 7,687,000 pounds, 11 percent greater than the holdings of this product on August 15, 1939, and an increase of 27 percent above the 5-year average.

Boston Cold-storage Stocks Continue to Increase

Coincident with the increase in landings at the Boston Fish Pier, holdings of fish in Boston cold-storage plants continued to increase during August. On August 28, according to the Boston office of the Fishery Market News Service, there were 14,363,000 pounds of frozen fishery products in these plants in Boston, an increase of 16 percent over the stocks of four weeks previous and 5 percent larger than the August 30, 1939, total. Salt-water items provided 13,163,000 pounds or 92 percent of the total, a gain of 15 percent over the July 31, 1940, total and 8 percent greater than the August 30, 1939, figure. Fresh-water stocks were negligible while shellfish totaling 1,166,000 pounds was held. The shellfish stock was greater by 22 percent than the July 31 total but a decrease of 22 percent from the August 30, 1939, figure.

Salt-water items on hand included 5,247,000 pounds of groundfish fillets, 3,909,000 pounds of mackerel, and 2,067,000 pounds of whiting. These stocks increased 1 percent, 23 percent, and 27 percent, respectively, from the corresponding stocks on hand on July 31, 1940, and the mackerel and whiting stocks increased 213 percent and 7 percent, respectively, from the corresponding stocks of August 30, 1939. The holdings of groundfish fillets remained lower than those of August 30, 1939, the August 28, 1940, total being 30 percent less than that of the earlier date. Squid and scallops were first and second in importance among items contributing to the shellfish total with 498,000 pounds and 439,000 pounds held, respectively. Squid stocks gained 34 percent during the 4-week period but were 55 percent less than those of August 30, 1939.

Groundfish fillets held on August 28 included haddock, 3,500,000 pounds, compared with 3,377,000 pounds held on August 30, 1939, and cod fillets totaled 787,000 pounds compared with 911,000 pounds on hand a year ago.

Frozen Fish Stocks in New York Increase 18 Percent

The New York office of the Fishery Market News Service reports that on August 29 there were 6,782,000 pounds of fishery products in cold-storage plants in New York City. This represents an increase of 18 percent over the holdings of July 25, five weeks previous, and a 1 percent gain over the total of August 31, 1939. Included in the stocks on hand were 3,635,000 pounds of salt-water items, 2,045,000 pounds of fresh-water items, and 1,102,000 pounds of shellfish, etc. These represented 54 percent, 30 percent, and 16 percent of the total holdings, respectively. Salt-water holdings, increasing 18 percent during the 5-week period and 16 percent during the year, included mackerel, 1,091,000 pounds; king salmon, 382,000 pounds; shad, 281,000 pounds; butterfish, 244,000 pounds; and other items. Mackerel stocks increased 34 percent from July 25 and 274 percent from August 31, 1939, while king salmon supplies showed gains of 43 percent from July 25 and 192 percent from a year ago. Increases of 28 percent over the July 25 holdings and 9 percent over those of August 31, 1939, were recorded for the fresh-water holdings. Whitefish and sturgeon were first and second in importance among the fresh-water items, contributing 902,000 pounds and 598,000 pounds to the totals. The whitefish stocks represented increases of 51 percent and 34 percent, respectively, over the totals of July 25, 1940, and August 31 a year ago.

Shellfish stocks gained 5 percent over the holdings of these items for July 25 but decreased 34 percent from the stocks of August 31, 1939. Shrimp, 300,000 pounds; scallops, 266,000 pounds; and squid, 242,000 pounds, were the main items held. The major change from previous holdings of these items was in the stock of squid which decreased 56 percent from the figure for August 31, 1939.

Cold-storage Holdings in Chicago Drop Five Percent in August

The holdings of frozen fishery products in Chicago cold-storage plants on August 29 were 5 percent less than the holdings of five weeks previous and 30 percent less than the August 31, 1939, total, according to figures compiled by the Chicago office of the Fishery Market News Service. There were 3,269,000 pounds of products on hand, consisting of 41 percent fresh-water items; 33 percent products from salt water; 14 percent shellfish; and 12 percent unclassified items.

Fresh-water items, which decreased 13 percent from the amount on hand on July 25 and 47 percent from the August 31, 1939, figure, included 310,000 pounds of whitefish, 298,000 pounds of smelt, and 224,000 pounds of lake herring and chubs, as well as other, less important items. The most pronounced changes from the stocks held on July 25, 1940, included a decrease of 68 percent in the stock of blue pike and sauger, which fell from 316,000 pounds to 102,000 pounds, and an increase of 19 percent in lake herring and chub holdings. Smelt, lake herring and chubs, and blue pike and sauger dropped 25 percent, 28 percent, and 89 percent from the totals of August 31, 1939. Salt-water items increased 18 percent over July 25 and decreased 4 percent from a year previous. Halibut, 299,000 pounds, was first in importance among the salt-water items, and cod fillets, 139,000 pounds, followed. The halibut stocks displayed an increase of 17 percent over the holdings of five weeks previous and a gain of 212 percent over those of August 31, 1939; cod fillet stocks increased 81 percent and 99 percent, respectively, over the earlier periods. Rosefish fillet holdings of 73,000 pounds gained 52 percent over those of five weeks earlier yet were 68 percent lower than the holdings on the corresponding date in 1939. Haddock fillets also produced a gain (23 percent) during the 5-week period yet were 56 percent below the 1939 figure. The stocks of shellfish items represented decreases of 19 percent and 30 percent from the July 25, 1940, and August 31, 1939, totals. Shrimp, the first shellfish item in importance, fell 47 percent in the 5-week period to 196,000 pounds and was 51 percent below the stock of a year previous. Scallops, which were second in importance among shellfish, increased 30 percent during the five weeks to 174,000 pounds, a figure 84 percent larger than the stock of August 31, 1939.

Canadian Holdings Increase in August

Preliminary figures issued by the Dominion Bureau of Statistics showed a gain of 10 percent in the holdings of frozen fresh fishery products in Canadian cold-storage plants on

September 1 as compared with those of August 1. Stocks held on September 1 totaled 30,206,000 pounds compared with 27,391,000 pounds on hand August 1 and 34,805,000 pounds stored on September 1, 1939. Leading items held, in order of importance, were sea herring, halibut, salmon, mackerel, whitefish, and cod fillets. Incomplete totals indicated that halibut stocks were much below those of September 1, 1939; that salmon holdings were enlarged greatly during the month beginning August 1, 1940; and that mackerel and whitefish and cod fillets on hand on September 1, 1940, decreased considerably from the totals of a month previous and of September 1, 1939.

There were also 2,107,000 pounds of frozen smoked fishery products held in Canadian cold-storage plants on September 1, 1940. Groundfish fillets and sea herring kippers were the most important smoked items held.

Canadian cold-storage plants froze 12,764,000 pounds of frozen fresh fishery products and 1,126,000 pounds of frozen smoked items during August. Fresh products increased 72 percent over the August 1939 freezing but decreased 20 percent from the July 1940 total. Smoked items frozen gained 664 percent and 37 percent from the August 1939 and July 1940 freezing. Largest fresh items included salmon, sea herring, cod fillets, and halibut, and sea herring kippers led the smoked products frozen.

CANNED FISH TRADE

Shrimp Canning Gains Momentum

The 40 shrimp packing plants in the South Atlantic and Gulf States which are covered by the Seafood Inspection Service of the Food and Drug Administration reported a total of 127,000 standard cases of shrimp packed so far this season from July 1 to August 31. This compares with 256,000 cases packed last year from July 1 to September 2 and 73,000 cases canned in 1938 for the corresponding period. Ninety-eight percent of the season's pack to date was canned in August.

Canning activity in the Gulf States had been retarded by a price controversy in Mississippi between fishermen and cannery operators, according to the New Orleans Market News office. In Mississippi canning operations, only a nominal amount of shrimp had been packed to September 10, it was reported.

Prices of canned shrimp in usual wholesale quantities, f.o.b. point of production, on September 1, 1940, were reported by Gulf Coast packers as follows:

	Per dozen No. 1 tall tins	
	Wet pack	Dry pack
Small	$1.05 - 1.10	$1.05 - 1.10
Medium	1.10 - 1.20	1.10 - 1.20
Large	1.10 - 1.25	1.15 - 1.25
Extra large or jumbo	1.15 - 1.30	1.15 - 1.30

California Tuna Pack Continues to Lead that of 1939

With 475,000 standard cases of tuna canned during July, the 1940 California tuna pack remained ahead of the production for 1939, according to preliminary figures of the California Division of Fish and Game. The total pack from January 1, 2,009,000 standard cases, was a gain of 16 percent over the 1939 total for the corresponding period. Canneries in the San Diego district packed 52 percent of the tuna production and the remainder was canned in the San Pedro district.

Production since January 1 included 1,233,000 cases of yellowfin tuna, 61 percent of the total; striped tuna; bluefin tuna; tonno style tuna; tuna flakes; bonito; yellowtail; and albacore.

Mackerel Canning is Resumed

Mackerel canning in California was resumed during July. A total of 27,000 standard cases of mackerel was packed during the month. This brought the pack from January 1 to 371,000 cases, 73 percent larger than the 1939 pack to the end of July. Ninety-two percent of the mackerel canned was packed in the San Pedro district, the balance being processed in the San Diego region. This information has been supplied by the California Division of Fish and Game.

FOREIGN FISHERY TRADE

Canned Salmon Forms Bulk of July Exports

A marked increase in canned salmon exports provided the most outstanding feature in foreign fishery trade during July. Almost 12,000,000 pounds of canned salmon were exported, this item contributing 66 percent of the total exports of edible fishery commodities and increasing 1682 percent above exports of this item during July 1939. Total movement of edible fishery products in United States foreign trade amounted to 37,917,000 pounds, a gain of 9 percent over the total for the previous month. The movement for the January-July period in 1940 was almost identical in volume with the movement during the corresponding period in 1939. Trade included 18,054,000 pounds of exports and 19,864,000 pounds of imports.

Exports during July, largely because of the increase in canned salmon shipments, constituted a 245 percent increase over the July 1939 exports and a rise of 146 percent above the total for the previous month. Canned salmon exports totaled 11,941,000 pounds compared with 670,000 pounds shipped in July 1939 and 4,333,000 pounds exported in June 1940. Sardines totaling 4,632,000 pounds were exported, a gain of 135 percent over the exports of the previous month and a rise of 66 percent over the total for July 1939. Exports of canned shrimp totaled 114,000 pounds. During the first seven months of 1940 there have been 89,662,000 pounds of products exported. This is a 41 percent increase over the exports of the January-July 1939 period. There have been 33,218,000 pounds of canned salmon and 46,432,000 pounds of canned sardines exported during this period in 1940. These represent increases of 61 percent and 72 percent, respectively, over the corresponding period in 1939. Since the first of the year there have been 1,330,000 pounds of canned shrimp in the exports compared with 3,270,000 pounds exported during the first seven months of 1939.

Among the most important items contributing to the imports of edible fishery products in July were fresh and frozen fresh-water fish, 3,698,000 pounds; pickled and salted cod, haddock, hake, etc., 3,036,000 pounds; lobsters, not canned, 1,345,000 pounds; canned sardines, 864,000 pounds; canned tuna, 485,000 pounds; canned crabmeat, 365,000 pounds; pickled and salted herring, 225,000 pounds; and canned lobsters, 177,000 pounds. Imports of fresh and frozen fresh-water fish increased 44 percent over the total for the previous month and 17 percent over the July 1939 figure, and pickled and salted cod, haddock, hake, etc., showed increases of 68 percent and 80 percent over the totals for the previous periods. Lobsters, not canned, displayed decreases of 61 percent and 35 percent; canned sardines increased 1 percent over the June total and decreased 65 percent from the July 1939 figure; canned tuna climbed 65 percent from the June figure but decreased 45 percent from the July 1939 total; canned crabmeat decreased 42 percent and 63 percent from the earlier totals; pickled or salted herring decreased 25 percent and 41 percent; and canned lobsters increased 21 percent and 100 percent, respectively, from the totals of June 1940 and July 1939.

For the period January-July 1940 the total imports in edible fishery commodities were 172,789,000 pounds. This represented a decrease of 13 percent from the corresponding period in 1939. Included in the imports have been 30,996,000 pounds of fresh and frozen fresh-water fish, 6 percent in excess of the 1939 total; pickled or salted cod, haddock, hake, etc., 23,405,000 pounds, a decrease of 11 percent; pickled or salted herring, 17,472,000 pounds, a decrease of 6 percent; lobsters, not canned, 12,916,000 pounds, an 11 percent gain; canned crabmeat, 10,112,000 pounds, a 66 percent rise; canned sardines, 8,269,000 pounds, a drop of 47 percent; canned tuna, 4,877,000 pounds, 14 percent below the 1939 total; and canned lobsters, 798,000 pounds, an increase of 42 percent.

THE COVER PAGE

The eastern oyster, Ostrea virginica, pictured on the cover is the basis of an industry yielding annually more than eight million dollars to the fishermen of the Atlantic Coast and the Gulf of Mexico. Oysters and the oyster industry are discussed in the feature article of this issue. The photograph depicts a serving of oysters on the half shell.

FISHERY TRADE INDICATORS
(Expressed in Thousands of Pounds)

Item	Month	Latest month	Same month a year ago	Previous month
FRESH FISH LANDINGS				
Boston, Mass.	July	30,177	25,447	17,001
Gloucester, Mass.	do	12,692	7,635	11,836
Portland, Me.	do	4,983	2,263	1,785
Boston, Gloucester, and Portland:				
Cod	do	7,086	7,006	2,951
Haddock	do	17,407	12,634	8,999
Pollock	do	584	766	1,062
Rosefish	do	10,489	7,005	9,900
Pacific Coast:				
Halibut, North Pacific ports	do	9,569	9,915	10,561
Halibut, Seattle	do	3,604	3,148	3,034
FISH RECEIPTS, CHICAGO 1/				
Salt-water fish	do	1,242	1,001	1,298
Fresh-water fish	do	2,303	1,849	2,340
Shellfish, etc.	do	647	593	1,044
By truck	do	1,590	809	1,371
By express	do	1,967	1,988	2,055
By freight	do	636	707	1,255
COLD-STORAGE HOLDINGS 2/				
New York, N. Y.:				
Salt-water fish	August	3,635	3,140	3,090
Fresh-water fish	do	2,045	1,874	1,595
Shellfish, etc.	do	1,101	1,677	1,047
Boston, Mass.:				
Salt-water fish	do	13,163	12,141	11,402
Fresh-water fish	do	33	32	17
Shellfish, etc.	do	1,166	1,487	960
Chicago, Ill.:				
Salt-water fish	do	1,060	1,101	901
Fresh-water fish	do	1,340	2,529	1,533
Shellfish, etc.	do	463	654	571
Unclassified	do	406	347	446
United States:				
Cod fillets	do	1,609	2,775	1,104
Haddock fillets	do	6,282	5,967	3,693
Halibut	do	13,976	11,448	11,878
Mackerel	do	7,912	3,504	6,784
Pollock fillets	do	327	236	441
Rosefish fillets	do	2,597	3,715	1,997
Salmon	do	5,009	3,389	2,888
Whiting	do	9,463	9,259	6,600
Shrimp	do	1,512	3,275	2,776
New England, all species	do	26,937	24,330	19,677
Middle Atlantic, all species	do	11,990	11,323	10,605
South Atlantic, all species	do	3,775	6,386	2,864
North Central East, all species	do	9,249	9,319	8,517
North Central West, all species	do	2,191	2,598	1,805
South Central, all species	do	964	1,267	1,352
Pacific, all species	do	21,390	17,542	17,259
FOREIGN FISHERY TRADE 3/				
Exports:				
All edible fishery commodities	July	18,054	5,236	7,338
Canned salmon	do	11,941	670	4,333
Canned sardines	do	4,632	2,795	1,970
Canned shrimp	do	114	423	161
Imports:				
All edible fishery commodities	do	19,864	29,640	30,097
Fresh-water fish and eels, fresh or frozen	do	3,698	3,171	2,576
Canned tuna	do	485	889	294
Canned sardines	do	864	2,474	857
Cod, haddock, hake, etc., pickled or salted	do	3,036	1,688	1,803
Herring, pickled or salted	do	225	381	298
Crab meat, sauce, etc.	do	365	980	630
Lobsters, not canned	do	1,345	2,056	3,468
Lobsters, canned	do	177	88	147

1/ Includes all arrivals as reported by express and rail terminals, and truck receipts as reported by wholesale dealers, including smokers.

2/ Data for individual cities are as of the last Thursday of the month, except those at Boston which are for the last Wednesday of the month, and those for geographical areas and the total of the United States which are as of the 15th of the month.

3/ From data compiled by the Bureau of Foreign and Domestic Commerce.

Note.--Data for the latest month are subject to revision.

PRINCIPAL FIELD OFFICES AND LABORATORIES
OF THE U. S. BUREAU OF FISHERIES

Division of Fishery Industries

Boston, Mass.	B. E. Lindgren	253½ Northern Ave. Market News Service
Chicago, Ill.	E. C. Hinsdale	200 N. Jefferson St. Market News Service
College Park, Md.	J. M. Lemon	Horticultural Bldg., U. of Md. Fish. Tech. Laboratory
Jacksonville, Fla.	S. C. Denham	309 Duval Bldg. Market News Service
New Orleans, La.	C. E. Peterson	1100 Decatur St. Market News Service
New York, N. Y.	W. H. Dumont	33-A Fulton St. Market News Service
San Pedro, Calif.	C. B. Tendick	Post Office Bldg. Fishery Statistics
Seattle, Wash.	V. J. Samson	421 Bell St. Terminal. Market News Service
Seattle, Wash.	R. W. Harrison	2725 Montlake Blvd. Fisheries Tech. Laboratory

Division of Fish Culture

LaCrosse, Wis.	C. F. Culler	Regional Headquarters
Seattle, Wash.	F. J. Foster	2725 Montlake Blvd. Regional Headquarters

Division of Scientific Inquiry

Ann Arbor, Mich.	Dr. John Van Oosten	University Museums. Great Lakes Fish. Investigations
Beaufort, N. C.	Dr. Herbert F. Prytherch	Fisheries Biological Laboratory
Cambridge, Mass.	W. C. Herrington	Room A-210 Harvard Biol. Lab. N.At.Fish. Investigations.
College Park, Md.	Robert A. Nesbit	Horticultural Bldg., U. of Md. Mid. & S.At. Fish. Invest.
Columbia, Mo.	Dr. M. M. Ellis	101 Willis Ave. Interior Waters Investigations
Milford, Conn.	Dr. Victor Loosanoff	Fish. Laboratory. New England Oyster Investigations
New Orleans, La.	M. J. Lindner	814 Fed. Office Bldg., 600 South St. Gulf Shrimp Invest.
Pensacola, Fla.	Dr. A. E. Hopkins	Box 1826. Gulf Oyster Investigations
Seattle, Wash.	Dr. F. A. Davidson	2725 Montlake Blvd. Fisheries Biological Laboratory.
Stanford University, Calif.	O. E. Sette	Room 450-B Jordan Hall. Pilchard Investigations

Division of Alaska Fisheries

Cordova, Alaska	Frederick G. Morton	Alaska Fisheries Service
Juneau, Alaska	C. L. Olson	Federal Bldg., Alaska Fisheries Service
Ketchikan, Alaska	J. Steele Culbertson	Alaska Fisheries Service
Seattle, Wash.	(Miss) Ted Murphy	706 Federal Bldg. Alaska Fisheries Service

FISHERY INDUSTRIAL AND MARKETING PUBLICATIONS

There follows a list of some of the industrial or marketing publications of the Fish and Wildlife Service, which are available for purchase from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices quoted. Price List 21, the most complete list of Service sales publications, may be obtained from the Superintendent of Documents, free of charge.

INVESTIGATIONAL REPORTS

No. 43. Some Effects of Ultraviolet Irradiation of Haddock Fillets. 1939. 5¢.
No. 42. A Plan for the Development of the Hawaiian Fisheries. 1939. 10¢.
No. 41. The Mineral Content of the Edible Portions of Some American Fishery Products. 1938. 5¢.
No. 40. Pacific Salmon Oils. 1939. 5¢.
No. 39. Trade in Fresh and Frozen Fishery Products and Related Marketing Considerations in the San Francisco Bay Area. 1938. 10¢.
No. 38. Marketing of Shad on the Atlantic Coast. 1938. 10¢.
No. 37. Preliminary Report on the Cause of the Decline of the Oyster Industry of the York River, Va., and the Effects of Pulp-mill Pollution on Oysters. 1938. 10¢.
No. 32. Studies on Drying Cod and Haddock Waste. 1935. 5¢.
No. 30. Effect of Manufacture on the Quality of Nonoily Fish Meals. 1935. 5¢.
No. 28. Studies on the Utilization of Swordfish Livers. 1935. 5¢.
No. 26. Fishery for Red Snappers and Groupers in the Gulf of Mexico. 1935. 5¢.
No. 25. The Iodine Content of Some American Fishery Products. 1935. 5¢.
No. 24. Modifications in Gear Curtail the Destruction of Undersized Fish in Otter Trawling. 1935. 5¢.
No. 20. Studies on the Smoking of Haddock. 1934. 5¢.
No. 18. The Iodine Content of Oysters. 1934. 5¢.
No. 16. Developments in Refrigeration of Fish in the United States. 1932. 5¢.
No. 14. Fisheries of the Virgin Islands of the United States. 1932. 5¢.
No. 13. Fisheries of Puerto Rico. 1932. 5¢.
No. 7. Market for Marine Animal Oils in the United States. 1931. 15¢.
No. 1. Menhaden Industry. 1931. 25¢.

FISHERY CIRCULARS

No. 25. Natural History and Methods of Controlling the Common Oyster Drills. 1937. 5¢.
No. 23. Decline in Haddock Abundance on Georges Bank and a Practical Remedy. 1936. 5¢.
No. 22. Organizing and Incorporating Fishery Cooperative Marketing Associations. 1936. 5¢.
No. 21. The Story of Oysters. 1936. 5¢.
No. 19. Practical Fish Cookery. 1935. 5¢.
No. 18. Conditions Affecting the Southern Winter Trawl Fishery. 1935. 5¢.
No. 15. Aquatic Shell Industries. 1934. 5¢.
No. 12. Introduction of Japanese Oysters into the United States. 1932. 5¢.
No. 11. Some Unusual Markets for Fish and Shellfish. 1932. 5¢.
No. 3. Market for Fresh Oysters in 14 Cities of the United States. 1931. 10¢.

ECONOMIC CIRCULARS

No. 74. Application of Preservatives to Fishing Nets. 1931. 5¢.
No. 69. Salmon--an Economical and Valuable Food. 1929. 10¢.

DOCUMENTS

No. 1092. Pacific Salmon Fisheries. 1930. 65¢.
No. 1078. Utilization of Shrimp Waste. 1930. 10¢.
No. 1075. Net Preservative Treatments 1930. 5¢.
No. 1065. Bibliography on Cod-liver Oil in Animal Feeding. 1929. 10¢.
No. 1059. Fishing Grounds of the Gulf of Maine. 1929. 25¢.

ADMINISTRATIVE REPORTS

No. 37. Fishery Industries of the United States, 1938. 35¢.
No. 36. Alaska Fishery and Fur-seal Industries in 1938. 15¢.
No. 35. Progress in Biological Inquiries, 1938. 15¢.
No. 34. Propagation and Distribution of Food Fishes, Fiscal Year 1938. 10¢.

ORDERS FOR THE ABOVE-LISTED PUBLICATIONS SHOULD BE FORWARDED DIRECT TO THE SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C., AND NOT TO THE FISH AND WILDLIFE SERVICE

THE STORY OF OYSTERS

Fishery Circular No. 21

"Nineteen centuries before the Walrus and the Carpenter in 'Alice in Wonderland' made their feast on oysters from the briny deep, the Romans in their banquet halls were singing the praises of oysters in poems, and other Romans were divided among themselves as to which were the best oysters--those which were carried back from Britain by the conquering Roman Legions, or those from Lake Lucrinus, the home of the famous Roman oyster."

The above, which is quoted from the booklet entitled "The Story of Oysters", by R. H. Fiedler of the U. S. Bureau of Fisheries, gives evidence of the many centuries during which the oyster has been prized as a food.

Beginning with the current month, retail seafood markets and many restaurants are again featuring the oyster. The season for this delectable and highly nutritious mollusk opened on September 1 and will continue through April.

The oyster is admirably adapted to numerous methods of preparation for the table. A few of the savory dishes which include oysters are: Pigs in Blanket, Baked Oysters with Cheese, Toasted Oyster Loaf, Sherried Oysters on Toast, and Oyster Paddies. "The Story of Oysters" includes recipes for these and thirty other unusual as well as common oyster dishes. The booklet also includes sections on the biology of the oyster, oyster culture, oyster enemies, the oyster fishery and industry, sanitary regulations, and food value of oysters.

The complete report may be obtained for five cents from the Superintendent of Documents, Government Printing Office, Washington, D. C., by requesting Fishery Circular No. 21. If purchased in quantities of 100 or more, a discount of 25 percent is allowed.